

FINDING OF NO SIGNIFICANT IMPACT

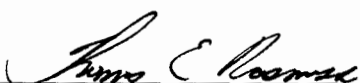
Red Knoll / Clover Flat Restoration

EA# OR-010-2003-01


The Bureau of Land Management, Lakeview District, Lakeview Resource Area (BLM), has analyzed a proposal and alternative to restore sage-grouse habitat invaded by noxious weeds. The objectives of the proposal are to restore sage-grouse habitat, control the spread of medusahead rye, a noxious weed, and reduce the risk of spreading medusahead to other areas. The project area is comprised of 269,000 acres within the Chewaucan watershed. There are approximately 3,000 to 5,000 acres of medusahead rye within the project area on both BLM and private lands. The project will include willing private landowners in an effort to reduce the medusahead seed bank and reduce chances of reinfestation from adjacent landowners. Two alternatives were analyzed in the attached Environmental Assessment (EA). The preferred alternative (Alternative 1) involves preparing the area infested with medusahead rye by prescribed burning heavy concentrations of thatch, followed by treating the area with herbicides, and then reseeding the area with perennial plants that will compete with medusahead rye. Herbicide use on BLM administered lands would be limited to only those effective on medusahead rye and only those allowed for use (due to court injunction). Currently, only glyphosate with a non-petroleum based surfactant meets these two use requirements. The no action alternative (Alternative 2) was also analyzed. Under this alternative, no action would be taken to restore sage-grouse habitat or control the spread of medusahead rye.

This project is in conformance with the Lakeview Resource Management Plan/Record of Decision (2003) and Integrated Noxious Weed Control Program EA (1994; as currently being amended). There are no wilderness, wild and scenic rivers, or known hazardous waste areas in the immediate project area. No significant or disproportionate effects would occur to low income or minority populations. There are water, fisheries, and the Red Knoll Area of Critical Environmental Concern in the project area that will be beneficially affected by the proposed project, but not on a regionally significant scale. Neither adverse nor beneficial effect is anticipated to air quality, lands, wetlands, prime or unique farmlands, floodplains, cultural resources, or mineral and energy resources. Surveys found no threatened or endangered plants or animals. Negative effects from the preferred alternative will be short-term in nature. Long-term positive effects will far outweigh the short-term negative effects.

On the basis of the analysis contained in the attached EA and all other available information, my determination is that none of the alternatives analyzed would constitute a major federal action which would adversely effect the quality of the human environment. Therefore, an Environmental Impact Statement (EIS) is unnecessary and will not be prepared.



Thomas E. Rasmussen, Manager
Lakeview Resource Area



Date

Environmental Assessment for Red Knoll/Clover Flat Restoration (EA No. OR-010-2003-01)

SECTION 1. PURPOSE AND NEED FOR ACTION

Introduction

The proposed project area comprises approximately 269,000 acres within the Chewaucan Watershed. Land ownership within the proposed project area is comprised of 67,000 acres of public lands administered by the Bureau of Land Management (BLM), 60,000 acres of public lands administered by the Forest Service, 142,000 acres of private lands and 200 acres of State lands (Please see map 2).

Land types within the proposed project area include ponderosa pine and mixed conifer forest at the higher elevations, juniper woodlands in the lower hills and rocky ridges, low and big sagebrush in the valleys and rolling ridges and agricultural croplands.

Much of the National Forest lands are in the upper elevations of the watershed. These are comprised mostly of commercial ponderosa pine stands and juniper woodlands. The majority of BLM-administered lands within the project area are comprised of juniper woodlands and rolling sagebrush hills. Much of the private lands are intensively managed agricultural fields, seeded grazing lands, or juniper woodlands.

Background

Medusahead rye (*Taeniatherum caput-medusae*) is an aggressive, exotic, and invasive winter annual grass species currently infesting millions of acres of private and public rangelands in the western United States. Medusahead is native to southern Europe. It was introduced to southwestern Oregon in the 1800's and began to spread through annual-dominated ranges of California, Oregon and the west (Sheley 1999). Medusahead usually germinates in the fall, develops a vigorous root system through the winter, then resumes active foliar growth in early spring. By establishing a strong root system, medusahead is able to rob other native perennial grasses and shrubs of limited soil moisture, thus gaining a competitive advantage. As a result, many sites lose their biodiversity and result in monotypic stands of medusahead. Medusahead tolerates a wide spectrum of soil types, but thrives in the medium to fine-textured soils containing clays and clay loams. Rocky low sagebrush communities are typically comprised of these clay and clay loam soils. Medusahead seeds remain viable for a few seasons. Unless the seed bank can be reduced or eliminated, medusahead continues to degrade a site and result in reduced desirable grass and forb species.

Most species of wildlife, including pronghorn antelope (*Antilocapra americana*) and sage-grouse (*Centrocercus urophasianus*), seldom utilize medusahead (Young 1992). This is likely a result of the high silica content found in the stems and other plant parts, making the plant unpalatable. The silica delays plant decomposition. Seed heads and stems remain intact over several growing seasons resulting in a build up of deep thatch layers. These layers also prevent other plant seeds from reaching the soil, preventing them from establishing a root system. Medusahead seeds are able to germinate in the thatch, and the seedlings then send their roots down into the soil. This adaptation allows medusahead to out compete other native plants in the area. Medusahead plants may also cause damage to animals due to barbed awns attached to the seeds, and long, twisted sharp-pointed glumes that remain on the plant after the seeds drop.

Within the proposed project area, medusahead rye has been established for at least 20 years, possibly much longer. The exact date and method of medusahead introduction to the area is unknown, but speculation ranges from the first seeds arriving on the underside of vehicles, or stuck in the wool of sheep grazed in the area, or being introduced from contaminated seed planted on private lands near Clover Flat. Since its introduction to the area, medusahead has consistently, slowly spread to several patches. The largest patches occur in areas that have had a major disturbance of one form or another. Disturbances where fire has removed shrubs and other vegetation or where sheep have been repeatedly bedded in the past have provided good opportunities for medusahead to establish. Once established, these large patches provide an opportunity for animals and vehicles to spread the seeds to new areas.

Purpose and Need for Proposed Action

Wildlife habitats and noxious weeds are of great concern to both private landowners and federal land managers. This project is being proposed in an effort to restore sage-grouse habitat invaded by medusahead, curtail the spread of medusahead into new habitats by assisting private landowners in controlling medusahead on private lands and by controlling the re-infestation of public lands. The BLM is including lands of willing private landowners within this analysis so that federal funds can be used in partnership on these private lands.

SECTION 2. ALTERNATIVES

Alternative 1 - Preferred Alternative

Restoration under this alternative is a three to five step process, depending on the type and extent of medusahead infestation. Medusahead populations in the project area occur in scattered pockets where medusahead does not dominate the site and does not form a thick layer of thatch. It also occurs in solid patches where it does dominate the site and forms a thick layer of thatch. Areas where medusahead is dominant are generally areas where vegetation or soil disturbance has taken place such as a fire, erosion, seeding, or trampling by livestock or wildlife. In these areas, decaying medusahead stems form a

mat of thatch that prevents desirable seeds from passing through preventing them from germinating in the soil. In areas where medusahead is present, but does not dominate the site, medusahead is either co-dominant with other species of grasses, or is present along with other shrubs like low sagebrush. Generally, medusahead does not form a dense thatch mat unless it is dominating the site.

Medusahead Dominated Sites

In areas where the medusahead has developed a mat of thatch, some form of disturbance is needed to remove or break up the thatch so that new desirable seeds can reach the soil and germinate. In the past, methods utilizing herbicides or tillage alone, have had limited success (Sheley 1999). Therefore, a slow burning, low intensity prescribed fire would be used to consume the dense mat and begin preparation of the seed bed. Fire line construction would be completed using foam or wet lines, so no ground disturbing fire line construction would occur. Fire prescriptions would use the minimum tool needed to complete the prescribed fire. This fire would destroy some of the medusahead seeds in the seed bank, but a substantial seed bank would remain.

The second step of the process would be to plant an introduced sterile or non-spreading annual grass like annual cereal rye, tridacale, or regreen. This would be designed to reduce soil nitrogen availability to medusahead and build additional fuels on the site capable of carrying a second slow burning, low intensity fire. This fire would be conducted the following year after additional medusahead seed from the seedbed had germinated. The fire would thus destroy more of the medusahead seed bank. This step would be omitted if the success of getting a sterile annual grass to establish is unlikely for a given site.

In the third step of the process, the treatment area would be rested until the following spring, then after sufficient medusahead seed has germinated, an herbicide treatment would be applied to further reduce the medusahead seed bank and allow for the final preparation of the seed bed.

The specific herbicides that would be used would depend on several factors. In 1984, the BLM and Forest Service completed the *Western Oregon Program Management of Competing Vegetation Environmental Impact Statement*. Legal action was taken on this EIS and the result was a court-ordered injunction that prohibited the use of herbicides on all BLM-administered lands in Oregon. The U.S. District Court modified the injunction in 1987 to allow BLM to use four herbicides to control noxious weeds only. Those four herbicides are glyphosate, 2,4-D, picloram, and dicamba. Currently, these four are the only herbicides that can be used on BLM-administered lands. However, within the project area, only glyphosate can currently be used to control these medusahead rye populations because of label restrictions and herbicide effectiveness. Glyphosate would be used according to the herbicide label and in accordance with conditions of the 1987 injunction. No petroleum base surfactants would be used with any glyphosate formulations.

If the injunction was modified or lifted in the future, the BLM would use only those herbicides that were approved for use on BLM-administered lands and were deemed appropriate for the site. Any herbicides would be used according to the specific herbicide label. Herbicide use on non-BLM lands are not subject to the injunction. Therefore, any herbicide that is labeled for rangeland application could be applied on private lands within the project area boundary. Herbicides such as Plateau® (BASF) have had a great deal of success in managing medusahead infestations without killing the sagebrush overstories or other perennial grasses already established on the site. Local research has shown that Plateau® can be very effective at controlling medusahead on local soils (Lancaster, *et. al.* 2004).

The last step would be to reseed the area with an appropriate seed mix that, when established, would compete with medusahead (see Appendix 1). Seed mixes would vary from site to site depending on land ownership, specific soils on each site, and appropriate native and non-native species of seed available. It is assumed that most private lands would be seeded with native or non-native species that are likely to compete with medusahead. These would most likely be a mix of crested wheatgrass, intermediate wheatgrass, alfalfa, or other hearty species. Seed mixes for BLM administered lands would be comprised of mostly hearty native species, but some non-natives may be used if native seedings fail. Treatments on BLM-administered lands would continue until a successful seeding of perennial species is established.

Other Medusahead Sites

The second type of medusahead sites occur in patches that range in size from a few square feet to an acre or more. At most of these sites, medusahead is present, but does not dominate the site. Mixed in with the medusahead are native and non-native perennial shrubs and grasses. Most of these areas do not have medusahead in sufficient density to create a dense mat of thatch.

These areas would be treated differently from the medusahead dominated sites. There is no need to prescribe burn these sites in order to reduce the layer of thatch. Herbicides would be used to reduce the medusahead seed bank and reduce competition between newly established plants and medusahead. The same herbicides would be used as described for medusahead dominated sites. If possible, herbicides would be spot sprayed and used in concentrations that would allow existing perennial grasses and shrubs to survive the treatment, but would kill most medusahead. Some sites would be seeded if perennial grasses and shrubs are not available on the site.

Other Proposed Management Actions, including Mitigation Measures

Vehicles used in or around these medusahead sites would be washed before leaving the site in an effort to reduce the spread of medusahead seed. Heavy equipment would not be operated in intermittent or ephemeral drainages when water is present in the drainages. Using low ground pressure equipment or operating equipment when the ground is dry or frozen are methods that would be employed to mitigate negative effects of cross-county

equipment use. Existing roads and trails would be used to access sites to the extent possible. Cross-country travel to isolated treatment sites would be minimized and would not be allowed to create a new trail that is visible or drivable by the public.

In addition, no heavy equipment would be allowed in riparian areas. Roads in and around the medusahead infestations and treatment sites on BLM administered lands would be closed to vehicles while under treatment, in an effort to reduce the spread of medusahead seed and minimize effects to treated areas.

Native grasses, shrubs and forbs would be collected in the local area and grown out for additional seed production. Additional seed produced from these collections would be used for restoration within the project area.

Areas treated with prescribed fire, herbicide, and reseeding, would be rested from grazing for at least two growing seasons after the final seeding, or until the seeding is well established. It is expected that it may take up to five years for native seeds to establish on some sites. Temporary fencing may be required on some sites in order to allow seeding establishment and keep grazing off of the sites. An “all states” noxious weed test would be conducted on all seed before it is planted to minimize risk of introduction of new species.

If non-selective herbicides are used, it may take three or more years of treatments before the area can be seeded. Because of the court ordered herbicide injunction, glyphosate is currently the only herbicide available for use on BLM administered lands. This is a non-selective herbicide. Livestock water sources within the treatment area may be unavailable during the treatment and rest periods.

Alternative 2 – No Action

Under this alternative, no action would be taken to curtail the spread of medusahead. Current land management activities would continue. Grazing would occur within the allotments where medusahead occurs. Vehicle travel would continue on roads where medusahead occurs. Some small areas of medusahead could be treated under the existing Integrated Noxious Weed Control Program Environmental Assessment completed in 1994 (BLM 1994). Treatment of any noxious weeds on private lands and the size of treatment areas on public lands are limited under this existing EA.

SECTION 3. AFFECTED ENVIRONMENT

Vegetation and Soils

Vegetation within the project area varies substantially from the high elevation forests to low elevation marsh and grasslands. Native rangelands within the general area of the project, except for the medusahead infestations, are considered to be in good vegetative condition. Typical vegetation for the project area consists of rolling hills and benches

covered with low and big sagebrush. There is scattered juniper on some of the rocky ridges and scattered across the upper elevations. Some scattered ponderosa pine extends down from the highest elevations and is mixed with juniper woodlands. The soils are thin but support tall sagebrush, as well as low sagebrush, and diversity increases in the steep rocky areas near the hill tops where juniper, gooseberry and long-flowered snowberry can be found. Native bunchgrasses in the area are bluebunch wheatgrass, Idaho fescue, needle-and-thread grass, Thurber's needlegrass, great basin wildrye, Sandberg bluegrass, squirrel-tail and Indian rice grass. Other shrubs include green rabbitbrush, spiny hopsage, and gray horsebrush. Medusahead as well as other introduced species are prevalent, including mediterranean sage, thistle, tumble mustard, cheatgrass, and bur buttercup. In areas where there is no medusahead infestation, forbs are abundant, including desert parsley, milkvetch, lupine, arrow-leaf balsamroot, death camas, larkspur, saxifrage, clover and desert primrose, as well as the cultural plants mentioned below.

The majority of the treatment areas are on the east and west side of Willow Creek. Soils in the project area on the east side of Willow Creek are on foot slopes and benches on hills. The area includes a mixture of stable and eroded phases, composed of primarily the Booth soil series on 2 to 15 percent slopes. On the stable soils, the surface layer is a very stony loam with clay below. The eroded soil has less surface rock and a silty clay surface layer with clay below. Both soils are moderately deep to bedrock. The stable soil is very shallow to the claypan and the eroded soil has the claypan at the surface. The soils are well drained and have slow permeability. The shrink-swell potential is high in both subsoils. The erosion potential by water is moderate in the stony loam soil and severe in the eroded soil.

The west side of Willow Creek is comprised of ancient wave-cut benches on hills with relatively steeper slopes, ranging from 5 to 30 percent. The surface layer of the Lasere soil series is a very stony loam. Below the surface layer, the soil is silty clay and silty clay loam. The soil is moderately deep to bedrock and very shallow to the claypan. The soil is well drained and has slow permeability. The shrink-swell potential is high at the moderate depths and the hazard of erosion by water is moderate or severe. The smaller treatment areas scattered through the rest of the project have similar soils.

Soils in the treatment area west of Lower Chewaucan Marsh are on benches and hillsides with steep slopes, ranging from 20 to 50 percent. Surface layers of the Xerolls are stony loam with very cobbly clay loam and very cobbly loam below. Rock outcrop is a major component of these soils. Xerolls are often warm and are also shallow to very deep to bedrock. The soils are moderately well drained and well drained. Permeability is moderate and moderately rapid, and the hazard of erosion by water is severe.

Prime or Unique Farmlands

Some soil types within the project area, when irrigated, are classified by the United States Department of Agriculture (USDA) as Prime or Unique Farmlands. The majority of these sites occur in the valley bottoms and places where deep, friable soil accumulates

over time. It is uncertain the exact acreage of prime farmlands within the project area, but the majority is associated with the Upper and Lower Chewaucan marshes. Prime farmlands are defined as those lands with the best combination of physical and chemical soil characteristics for producing food, feed, forage, fiber, or oilseed and are available for those uses. The USDA recognizes that several levels of government should encourage the wise use of our nation's prime farmland. More information on soils in the project area can be found in *Soil Survey of Lake County, Oregon, Southern Part* (NRCS, undated).

Cultural Plants

Several cultural plants identified by Tribal peoples do exist in the ACEC. These include sego lily (*Calochortus macrocarpus*), wild onion (*Allium parvum*), white stemmed mentzelia (*Mentzelia albicaulis*), rock gooseberry (*Ribes cereum*), broomrape (*Orobanche fasciculata*), and several species of desert parsley (*Lomatium macrocarpum*, *L. nevadense*, *L. nudicaule* and *L. canbyii*). These species all contribute to the biodiversity of the plant communities. The low sagebrush (*Artemisia arbuscula*) community which inhabits the same soil type (with clay pan) is the community most susceptible to the invasion of this noxious weed. The majority of these cultural plants grow on these low sagebrush sites.

Noxious Weeds

Several noxious weed species occur within the project area. They pose a significant threat to the integrity of the area's biological resources because of their ability to replace desirable plant communities. Medusahead rye is the dominant noxious weed. Much of the area that is dominated by medusahead rye is on the low sagebrush flats and rolling hills that occur at mid-slope elevations. However, mediterranean sage, Canada thistle, musk thistle, and bull thistle are present in small, widely scattered populations and are under treatment (BLM 1994).

Threatened, Endangered, and Sensitive Plants

There is only one known BLM Special Status plant species located in the area: long-flowered snowberry (*Symphoricarpos longiflorus*), a BLM tracking species, which occurs in the upper parts of the hills at the base of the talus slopes near rocks.

Watershed/Hydrology

The water resources in the treatment area include Coyote creek, unnamed intermittent and ephemeral drainages and Red Knoll reservoir. Coyote Creek and a number of intermittent and ephemeral drainages flow into the perennial water of Willow Creek. Coyote creek is perennial where it is spring fed, and becomes intermittent then ephemeral downstream. Red Knoll Reservoir is located west of Willow Creek and has high use by livestock. There is active erosion at the channels into the reservoir and at the spillway.

Wildlife and Fish

There are several species of wildlife that inhabit the project area. Many of these species are common throughout the sagebrush steppe of eastern Oregon. Birds that are common to the area consist of both year round residents and migratory species. The most abundant of these are the shrub and ground nesting species like sparrows and larks. There are also several species of reptiles and a few amphibians that occur within the project area. Many of these species are relatively scarce, but are most abundant in and around the reservoirs and riparian areas. Several species of small mammals also inhabit the project area. Most of these species are common to the area and occur in several different habitats. Mule deer and pronghorn antelope habitats occur throughout the project area.

There are three species of fish that are present within the project area. Redband trout (*Oncorhynchus mykiss*) occur within the Chewaucan River and Crooked creek. Tui chub (*Gila bicolor*) occur within the crooked creek drainage. Speckled dace (*Rhinichthys osculus*) occur within the Chewaucan River, crooked creek, and willow creek.

Threatened, Endangered, and Special Status Wildlife

Special status wildlife species or their habitats that are present within the project area include the bald eagle (*Haliaeetus leucocephalus*), ferruginous hawk (*Buteo regalis*), peregrine falcon (*Falco peregrinus*), burrowing owl (*Speotyto cunicularia*), and pygmy rabbit (*Brachylagus idahoensis*). There are also four species with high public interest. These include, sage-grouse (*Centrocercus urophasianus*), mule deer (*Odocoileus hemionus*), bighorn sheep (*Ovis canadensis*), and pronghorn antelope (*Antilocapra americana*).

No nesting habitats exist for bald eagles within the project area. Some foraging areas do occur within the project area, but use by bald eagles is probably limited to occasional scattered carrion. Some nesting habitat does exist for ferruginous hawks in scattered juniper habitats along some of the hill tops and ridges. Foraging habitat for ferruginous hawks is scattered across the landscape. Habitats for burrowing owls and pygmy rabbits are scarce throughout the project area. Some small habitat areas do exist for these species. There are no incidental sightings for these species within the project area. Bighorn sheep are restricted to the rocky ridges and higher hill tops on the north end of the project area. Habitats for sage-grouse occur throughout most of the project area, but areas seeded to non-native grasses and areas devoid of sagebrush probably do not receive much use by sage-grouse.

Recreation/Visual Resource Management

Primary recreational activities occurring in this area include hunting and driving. The area has no developed campsites or recreation facilities.

The Red Knoll ACEC is within Visual Resource Management Class II. The objective of Class II is to retain the existing character of the landscape. The level of change resulting from a proposed project to the characteristic landscape must be low. Management activities may be seen, but must not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

In addition, the *Lakeview RMP/ROD* (BLM 2003b) states that, "...emphasis will be given to protecting and/or mitigating intrusions in all areas. All developments, land alterations, and vegetative manipulations with a 3-mile buffer (6 mile corridor width) of all major travel routes and recreation use areas will be designed to minimize visual effects (unseen areas within these zones will not be held to this standard). The travel routes include... Highways 31 and 395". Portions of the project will be within this corridor area.

Areas of Critical Environmental Concern (ACECs)

ACECs are created to identify and implement special management for areas that have important resource values. The project area includes all of the Red Knoll ACEC (11,127 acres) which was created to protect: high density and wide variety of cultural sites important for research and traditional cultural values, unique geological formations (beach terraces), a unique plant community containing a Bureau sensitive plant species, and wildlife (sage-grouse habitat) (BLM 2003a).

Range Administration

The project area encompasses 7 grazing allotments allocated to 6 permittees. These allotments presently provide 962 AUMs of forage and include: #1306 Dicks Creek, #403 Pine Creek, #404 Willow Creek, #406 West Clover Flat, #407 Clover Flat, #410 Tim Long Creek, and #411 Jones Canyon.

A variety of grazing systems are in use within these 7 allotments. Five allotments are in a spring grazing rest-rotation system. Two allotments are made up of private lands and small BLM parcels and have the same grazing use each year.

Cultural Resources

The Red Knoll ACEC was designated primarily for the management of significant cultural resources. The area has numerous archaeological and ethnographic sites which include rock art, lithic (obsidian) procurement and stone tool manufacture sites, rock cairns, rock rings, rock walls, burials, lithic scatters and occupation sites.

The project area has cultural importance for the maintenance of Native American lifeways for members of The Fort Bidwell Paiute Tribe, The Klamath Tribes, The Burns Paiute Tribe and The Confederated Tribes of the Warm Springs. Cultural use of plants and animals within this area is possible. Specific individuals within these groups have

used the area or they have been used by family members for generations. Numerous sites in the area pertain to this use both past and present.

SECTION 4. ENVIRONMENTAL IMPACTS

Introduction

The goals of this proposed project are to reduce or stop the spread of medusahead within the project area and to points outside the project area, to increase plant diversity within the BLM portions of the project area, and to restore, to the best extent practical, sage-grouse habitat within the BLM portion of the project area. It is understood that medusahead would still be a component of the plant species within the project area. Total eradication is not possible. The goal of this proposed project is to reduce medusahead to a minor component throughout the project area. If major disturbances like wildfire occur after treatment, future treatments may be necessary to keep medusahead as a minor component within the project area.

There are no wilderness, wild and scenic rivers, or hazardous waste areas in the project area. No significant or disproportionate impacts would occur to low income or minority populations. Neither adverse nor beneficial impacts are anticipated to air quality, lands, wetlands, floodplains, or mineral and energy resources.

ALTERNATIVE 1 - Preferred Alternative

Vegetation and Soils

The effects of the preferred alternative would vary from site to site, depending on the type of treatment. Prescribed fire treatments would have negative effects on the few remaining shrubs that occur within the heavily infested medusahead areas. These effects would be minimal overall, because space would be made after the treatments for new shrubs and grasses to become established after seeding. Likewise, herbicide treatments would have short-term negative effects on some species of forbs, grasses, and shrubs. It is suspected that broad scale (non-selective) herbicides would have the most negative effect on vegetation because they are not selective and, depending on the amount applied, would kill almost all vegetation. Applied in limited quantities, glyphosate would kill annual grasses and forbs, but have minimal effects on some shrubs. Selective herbicides like Plateau®, would have less effect on non-target vegetation because it would allow land managers to target specific species like annual grasses and forbs, while not harming shrubs and perennial grasses. Overall, effects to vegetation would be positive, by reducing competition between medusahead and other desirable perennial plant species.

Prescribed fire treatments could have negative effects on soil resources. Prescribed fire would cause temporary losses in soil productivity from removal of vegetation until plants are reestablished. Compaction would occur from operating heavy equipment off-road,

but negative effects are likely to be minor. These effects would be minimized by using low ground pressure equipment, fewer passes, or operating when the ground is dry or frozen. Ground disturbing activities would cause temporary negative effects to the soil until the bare ground is revegetated. Rehabilitation by reseeding the fire lines post-treatment would minimize these effects.

The effects on soil from herbicide accumulation would be minor. Glyphosate does not persist in the soil, so the potential for long-lasting negative effects would be small.

Erosion would occur after vegetative cover is removed and before new plants are established. Soils on the east side of Willow Creek, the treatment area west of Lower Chewaucan Marsh, and the west side of Willow Creek are vulnerable to erosion by water. Revegetating these areas after fire and herbicide treatments would be especially important to prevent potential negative effects to soil resources.

Since the proposed project comprises a relatively small portion of the Chewaucan Watershed, the effects on the soil resources at this scale would be minimal. Despite this, the net cumulative effect would be an increase in soil productivity as medusahead is removed and growth of riparian vegetation and desirable upland vegetative cover occurs.

Prime and Unique Farmlands

Medusahead rye for the most part does not generally infest Prime or unique farmlands. This is most likely due to the fact that it prefers shallow clay and clay loam soils. There are no known infestations of medusahead rye within prime or unique farmland areas within the project area. Negative effects would occur to prime or unique farmlands if medusahead were to infest these areas. Therefore, treatment of those prime or unique farmlands infested with medusahead would provide positive effects.

Cultural Plants

Prescribed burning would have a positive effect on cultural plants such as *Allium* and *Lomatium*, provided the area is rested from grazing for 3-4 years after reseeding of native seeds. Herbicide application would have a negative effect if directly applied to cultural plants. However, if medusahead rye is reduced in an area, cultural plants would have a better chance to reestablish. In this situation, herbicide use would have a positive effect on the resulting plant community. Some of the native seed bank that is being collected for reestablishment would contain cultural species and the effort would be made to try to reintroduce them.

Noxious Weeds

A reduction in the amount of medusahead on the landscape would be beneficial, in part because it would reduce the probability of spread to new areas. However, ground disturbing activities such as prescribed burning and seeding could introduce noxious weeds from elsewhere through equipment and vehicle use during treatment activities.

Mitigation measures like washing vehicles and equipment before they leave the area and performing an “all states” noxious weed test on all seed before it is planted would reduce the risk of introduction of other noxious weeds.

Threatened, Endangered, and Sensitive Plants

The action proposed would have no effect on the long-flowered snowberry, because it grows outside of the area of current weed infestation.

Watershed/Hydrology

Prescribed fire treatments would have negative effects on water resources. Increased runoff and erosion would occur from bare ground associated with loss of vegetation. Heavy equipment would not be operated in intermittent or ephemeral drainages when water is present in the drainages. Negative effects from compaction can be mitigated by using lower ground pressure equipment, fewer passes, or operating when the ground is dry or frozen. No operation of heavy equipment would be allowed in riparian areas. Erosion from ground disturbing activities is another potential negative effect.

The effects on water resources from herbicide treatment would be minimal. Herbicides will not be used in perennial streams, or if water is present in ephemeral drainages or in intermittent streams. (BLM 1991).

Erosion caused by removal of riparian vegetation would have a negative effect on water resources in the short term. Revegetating the sites with desirable vegetation after treatments would mitigate these effects by reducing the amount of bare ground exposed.

The proposed project would increase watershed function in the affected watersheds through an increase in capture, storage, and release of water in the system. Watershed health on surrounding private land would function differently due to differences in management in comparison to BLM administered land, but function would be improved overall if medusahead populations are reduced.

Wildlife and Fish

Impacts to fish and wildlife resources would be minimal. Some minor negative effects would occur to some wildlife habitats during burning, seeding or herbicide operations. These effects would only be temporary in nature and would only effect individuals. Negative effects to area populations would not occur to any particular species. Habitats for all wildlife species would be improved in the long run by reducing the amount of medusahead and by reducing the rate and likelihood that medusahead would spread to other areas.

No effects would occur to fish species present. Treatments would be designed so no effects would occur to riparian vegetation. Herbicides would be used according to all

current BLM use and label restrictions; therefore there would be no effect to fish or their habitats.

Threatened, Endangered, and Special Status Wildlife

Positive effects to sage-grouse would occur through restoration of more viable sage-grouse habitats. No effects would occur to other threatened, endangered or special status wildlife species within the project area.

Recreation/Visual Resource Management

Depending on the time of year when the burning and the application of herbicides occur, some recreational use (primarily hunting and driving) would be temporarily displaced. Prior to conducting treatments, a Visual Contrast Ratings form (BLM 8400-4) would be filled out to ensure the project meets Class II standards. There would be a short-term visual effect to the landscape as a result of the treatments (for example, currently tan or green areas of vegetation would turn black). In the long-term, the vegetation would be converted to match the predominant natural vegetation in the surrounding area.

Areas of Critical Environmental Concern (ACECs)

This alternative would benefit some of the resource values for which the ACEC was created; specifically by improving the health and diversity of the plant communities, especially cultural plant and sage-grouse habitat, through re-establishment of native species.

Range Administration

Control of medusahead would result in an increase of available forage and restore or stabilize plant community diversity over the long-term. During treatments, a temporary loss of forage would occur within individual allotments. Close coordination between the BLM and affected permittees would be required to minimize impacts to livestock grazing. Temporary fencing would be required in some instances to protect treatment areas during restoration activities. This would keep livestock out of recovering areas, while still allowing grazing use within the rest of the pasture.

Cultural Resources

Tribal members support the reduction or removal of medusahead rye in general. However, concerns exist that long-term effects may result from the use of herbicides on areas where food plants and cultural plants might be gathered. Mechanical methods of seeding or ground preparation could affect cultural resources in the area, both archaeological and ethnographic. However, cultural clearances would be conducted on BLM lands prior to ground disturbing activities. Any cultural sites located would be avoided. Treatment activity in the area would temporarily limit and effect ethnographic

uses of the area. Some exposure of sites after fires could lead to further artifact collecting.

ALTERNATIVE 2 - No Action Alternative

Introduction

If no action is taken to reduce the spread of medusahead, it is assumed that this invasive species would continue to increase its aerial extent and rate of spread. If left unchecked, medusahead would likely spread along the edges of the current infestation, further reducing native plant communities. Over time, disturbances from wildfire, wind and water erosion, and soil disturbances from ground squirrels and gophers would also likely increase the spread of medusahead. It is also probable that medusahead would spread from this area to other areas that are not currently infested. This spread would occur by medusahead seeds being transported in the hair and fur of wildlife or livestock, by transfer of seeds from human activities either on vehicles or on clothing, or by wind and water. The more time that passes without medusahead treatment, the greater the likelihood that the infestation would spread to other areas. Without treatment, it is likely that medusahead would become established across thousands of acres of public and private lands in Lake County.

Vegetation and Soils

Not treating the medusahead sites in the proposed project area would cause a continued loss in plant diversity. The degree of negative effects to vegetation would vary depending on future disturbances in and around existing medusahead sites. Native vegetation would be replaced by medusahead, thereby reducing plant community structure and diversity. No negative short-term effects would occur from tillage, prescribed fire, or herbicides, but long term negative effects from medusahead would be greater than short term negative effects from tillage, prescribed fire, or herbicides. Allowing medusahead to continue to dominate the vegetative community would negatively affect soil productivity. Medusahead has a shallow root system which does not reach the potential rooting depth of the soil. This reduces the potential nutrient cycling of the sites, and subsequently, also decreases the potential soil productivity. Overall, allowing medusahead to continue to spread would cause significant negative effects to both vegetation and soils.

At present, over 600 acres is dominated by solid patches of medusahead with a deep thatch layer with little or no chance for other species to exist or invade. Another 2,400 to 4,400 acres where medusahead has not widely spread would increase and the same thatch problem would arise. If the BLM does nothing about the infestation, it would only get worse and cause further degradation of the surrounding native plant communities.

Prime and Unique Farmlands

Because medusahead rye for the most part does not generally infest prime or unique farmlands, there would be only minor effects to prime or unique farmlands from the No Action alternative. These effects would vary from site to site, but infestations would be limited by their ability to dominate deep soils within these areas.

Noxious Weeds

If no action is taken, the medusahead would continue to expand, further compromising the landscape by robbing native plants of available soil moisture and nutrients, and increasing its competitive advantage. If left untreated, other noxious weeds, like mediterranean sage would spread more rapidly into areas already disturbed by medusahead.

Threatened, Endangered, and Sensitive Plants

If no action were to take place, the long-flowered snowberry would probably not be affected as medusahead has not been observed growing in the same habitat.

Watershed/Hydrology

Not treating the medusahead sites in the proposed project area would cause continued spread of medusahead infestations and subsequent loss of important native vegetation. As native vegetation is displaced, the potential function of these sites would decrease. Over time, the ability of the watersheds to capture and store water would decrease.

Taking no action specifically at Red Knoll Reservoir would allow the continued spread of medusahead from this site. Wildlife, livestock, and water overflowing from the spillway transport medusahead seed from the reservoir area.

Wildlife and Fish

If left unchecked, medusahead would likely spread along the edges of the current infestation, further reducing wildlife habitats. If this occurs, negative effects would occur to several species of wildlife. Habitats for mule deer and pronghorn antelope would all have major negative effects in the areas where infestations occur. Raptors would be negatively affected by a reduction in prey species, but to a lesser degree than other species.

No effects would occur to fish under this alternative.

Threatened, Endangered, and Special Status Wildlife

Negative effects are expected to sage-grouse under this alternative. On the Burns BLM District, when a sage-grouse lek was infested with medusahead, the sage-grouse left the

area entirely (Taylor 2004). These effects would continue to spread as the medusahead infestations spread to new areas occupied by sage-grouse. It is expected that impacts to bald eagles would be minimal. No effects would occur to other special status species within the project area.

Recreation/Visual Resource Management

There would be no direct effects to recreational use. Increasingly larger areas of medusahead would become more visually apparent to the visitor. These large patches stand out and are in sharp contrast to the predominant natural features of the characteristic landscape.

Areas of Critical Environmental Concern (ACECs)

The heavy infestation and presence of medusahead would continue to expand and degrade the values for which the ACEC was created. Failing to treat the problem would cause a greater loss of cultural plants, natural plant communities, and sage-grouse habitat.

Range Administration

No action would result in a continuance of the present condition within plant communities until a major disturbance occurs, such as wildfire. Allowable livestock levels would likely decrease over time as medusahead replaced native plant communities and palatable forage decreased.

Cultural Resources

Medusahead would continue to compete with culturally important plants in the area. Animals of importance to the Tribes would be reduced further due to loss of habitat. This alternative would have no impact on cultural or historic sites.

SECONDARY, INDIRECT AND CUMULATIVE IMPACTS

On-going weed control efforts (BLM 1994) on other species in the project area (mediterranean sage, Canada thistle, musk thistle, and bull thistle) would have positive, cumulative effect on biological diversity by encouraging the reestablishment of native species across the watershed.

MONITORING

Monitoring of sites post-treatment would aid in determining if water and soil resource mitigations were successful. In addition, monitoring of vegetation using vegetation plots and photo points would be completed pre-treatment and post-treatment every one to three years to determine if goals and objectives were achieved. Monitoring in areas susceptible

to erosion would be completed to assess the effects of the project on soil and water resources.

SECTION 5. CONSULTATION AND PUBLIC INPUT

Public, Interagency, and Tribal Involvement

Oregon Department of Fish and Wildlife
Lake County Soil and Watershed Conservation District
Private Landowners –
 Mike O’Leary
 Jay Counts
 Keith Barnhart
 Rob Elder
 J Spear Ranch
The Klamath Tribes
The Burns Paiute Tribe
The Confederated Tribes of the Warm Springs
The Fort Bidwell Paiute Tribe
USDA Forest Service, Fremont-Winema National Forests
Oregon State University, Extension Service

SECTION 6. PARTICIPATING INTERDISCIPLINARY STAFF

Heidi Albertson - Range
Philip Blythe - Fuels
Elizabeth Burger - Hydrology/Soils
Gretchen Burris - Recreation
Bill Cannon - Cultural Resources
Ken Kestner - Staff Review
Todd Forbes - Wildlife
Lucile Housley - Botany
Barbra Machado - Hydrology/Watershed
Erin McConnell - Noxious Weeds
Alan Munhall - Fisheries/Riparian
Lance Okeson - Range
Paul Whitman - Planning/NEPA

SECTION 7. REFERENCES

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Taylor, W.F. 2004. Conversation about sage-grouse on the Burns BLM District. Pers. Comm. April 21, 2004.

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APPENDIX 1 - POTENTIAL SEED SPECIES

Grasses:

Bottlebrush squirreltail	<i>Sitanion hystrix (Elymus elymoides)</i>
Idaho fescue	<i>Festuca idahoensis</i>
Bluebunch wheatgrass	<i>Agropyron spicatum (Pseudoroegneria spicata)</i>
Great Basin wild rye	<i>Elymus cinereus (Leymus cinereus)</i>
Tridicale	<i>Triticum aestivum x Secale cereale</i>
Regreen	<i>Triticum aestivum x Elytrigia elongata</i>
Cereal Rye	<i>Secale Cereale</i>
Crested Wheatgrass	<i>Agropyron cristatum</i>

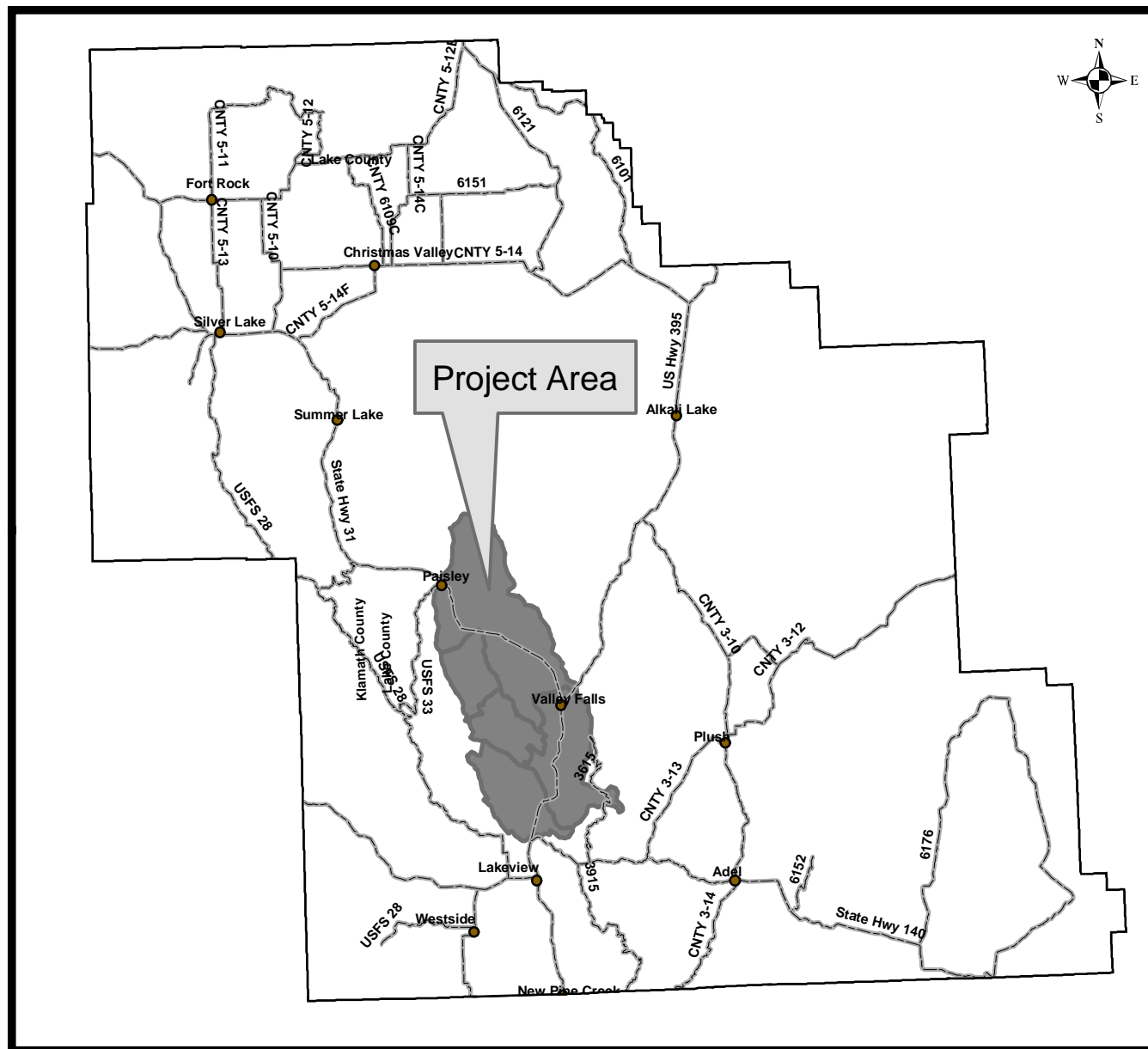
Forbs:

Milkvetch	<i>Astragalus purshii, A. obscurus, A. filipes</i>
Big-headed clover	<i>Trifolium macrocephalum</i>
Phlox	<i>Phlox longifolia, A. diffusa</i>
	<i>P gracilis (Microsteris gracilis)</i>
Desert parsley	<i>Lomatium macrocarpum, L. nevadense</i>
	<i>L. nudicaule, L. canbyi</i>
Hawksbeard,	<i>Crepis acuminatum</i>
False dandelion	<i>Agoserus heterophylla and other species</i>
Arabis	<i>Arabis species</i>
Buckwheat	<i>Erigonum corymbosus, E. umbellatum</i>
Blue Mt prairie clover	<i>Petalostemon ornatum (Dalea ornate)</i>
Alfalfa	<i>Medicago sativa</i>
Small Burnet	<i>Sanguisorba minor</i>
Forage Kochia	<i>Kochia prostrata</i>

Shrubs:

Low sagebrush	<i>Artemisia arbuscula</i>
Green rabbit brush	<i>Chrysothamnus viscidiflorus</i>
Gray horsebrush	<i>Tetradymia canescens</i>

Map1 - Red Knoll / Clover Flat Restoration Project Area



Legend

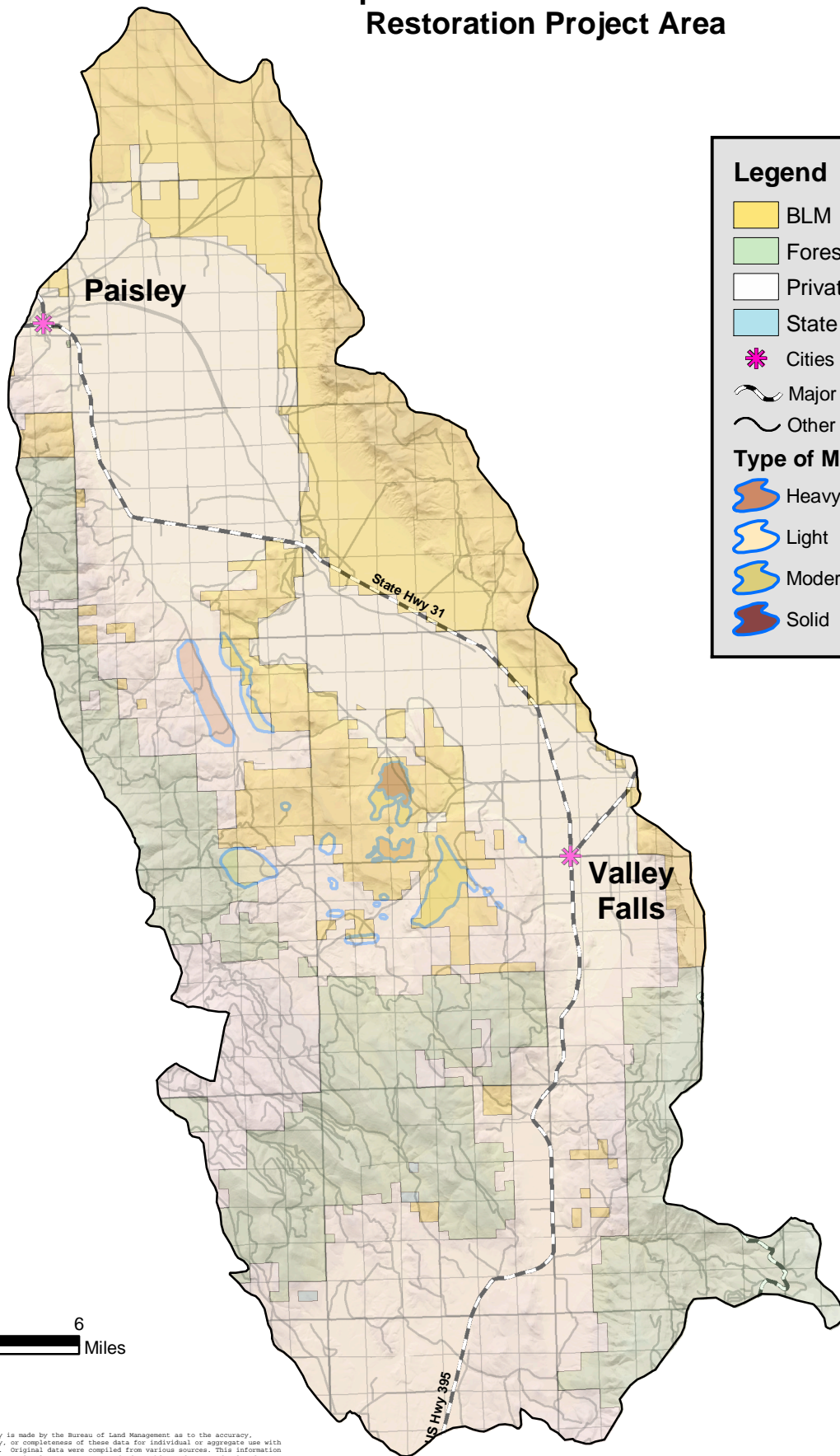
- Cities
- Lakeview Resource Area
- Major Roads
- Project Area

0 5 10 20 Miles



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Map 2 - Red Knoll / Clover Flat Restoration Project Area



Legend

- BLM
- Forest Service
- Private
- State

- ✱ Cities
- Major Roads
- Other Roads

Type of Medusahead

- Heavy
- Light
- Moderate
- Solid

0 1.5 3 6
Miles



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